Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An optical isolation device comprising:

an optical channel having a first end and a second end;

a light source adjacent the first end for transmitting light through the optical channel;

a detector adjacent the second end for producing electrical power when impinged upon by the transmitted light;

a signal generator adjacent the second end powered by the electrical power from the detector, the signal generator transmitting optical signals through the optical channel in response to input from a remote isolated circuit at the second end, the input being generated by a user of the remote isolated circuit; and

a sensor adjacent the first end for producing electrical signals in response to the optical signals.

2. (Previously presented) The device of claim 1 wherein the optical channel includes a fiber optic filament.

3. (Currently amended) An optical isolation device comprising:

an optical channel having a first end and a second end;

a light source adjacent the first end for transmitting light through the optical channel;

a detector adjacent the second end for producing electrical power when impinged upon by the transmitted light;

a signal generator adjacent the second end powered by the electrical power from the detector, the signal generator transmitting optical signals through the optical channel in response to input from a remote isolated circuit, the input being generated by a user of the remote isolated circuit;

a sensor adjacent the first end for producing electrical signals in response to the optical signals; and

~~The device of claim 1 further comprising~~ a controller coupled to the light source and the sensor, the controller causing a task to be performed in response to receipt of the optical signals.

4. (Previously presented) The device of claim 1 further comprising a lens adjacent the second end of the optical channel, the lens refracting both the optical signals and the light.

5. (Previously presented) The device of claim 1 wherein the detector is an opto-electrical detector having a photovoltaic cell.

6. (Previously presented) The device of claim 1 wherein the detector includes an array of photonic devices.

7. (Previously presented) The device of claim 6 wherein the photonic devices are photovoltaic cells.

8. (Previously presented) The device of claim 7 further comprising a lens adjacent the second end of the optical channel, the lens refracting both the optical signals and the transmitted light.

9. (Previously presented) The device of claim 3 wherein the controller is further coupled to the signal generator, the controller inducing the light source to generate light in pulses having an on time and an off time and inducing the signal generator to generate optical signals during the off time of the light.

10. (Previously presented) The device of claim 9 further comprising an electrical storage device electrically coupled to the detector.

11. (Previously presented) The device of claim 1 wherein the intensity of the light source and the sensitivity of the detector are sufficient to satisfy the power needs of the remote isolated circuit and the signal generator.

12. (Previously presented) The device of claim 1 wherein the light source generates light in a bandwidth centered about a first frequency, the detector is sensitive in a bandwidth including the first frequency, the signal generator generating optical signals in a bandwidth centered about a second frequency, and the sensor being sensitive in a band width including the second frequency.

13. (Previously presented) The device of claim 12 wherein the light source generates monochromatic light.

14. (Previously presented) The device of claim 13 wherein the sensor is not sensitive to the monochromatic light.

15. (Previously presented) The device of claim 12 wherein the sensor is not sensitive to light in the bandwidth centered about the first frequency.

16. (Previously presented) The device of claim 12 wherein the light source is a laser.

17. (Previously presented) The device of claim 16 wherein the laser is a semiconductor laser.

18. (Previously presented) The device of claim 16 wherein the signal generator includes a light emitting diode.

19. (Previously presented) The device of claim 12 wherein the light source has a narrow bandwidth.

20. (Withdrawn) An opto-electric device comprising

a first circuit including a first light source, the first light source periodically changing between an on state and an off state;

a second circuit including a second light source and a photovoltaic cell to provide energy to at least a portion of the second circuit; and

a first optical channel optically coupled to the first and second circuits, light from the first light source being transmitted to the photovoltaic cell over the first optical channel, and light from the second light source being received by the first circuit when the first light source is in the off state.

21. (Cancelled).

22. (Withdrawn) The device of claim 20, wherein light from the second light source provides feedback to the first circuit regarding a condition in the second circuit.

23. (Withdrawn) The device of claim 20, wherein the second light source has an on state and an off state and the first circuit includes a detector configured to detect the state of the second light source when the first light source is in the off state.

24. (Withdrawn) The device of claim 20, wherein light from the first light source has a higher intensity than the light from the second light source.

25. (Withdrawn) The device of claim 20, further comprising a storage device, the photovoltaic cell providing energy to the storage device.

26. (Withdrawn) The device of claim 25, wherein the storage device comprises a battery.

27. (Withdrawn) The device of claim 25, wherein the storage device comprises a capacitor.

28. (Withdrawn) The device of claim 20, further comprising a lens positioned adjacent an end of the first optical channel so that light from the first light source passes through the lens prior to reaching the photovoltaic cell.

29. (Withdrawn) The device of claim 28, wherein the lens is configured to disperse the light from the first light source.

30. (Withdrawn) The device of claim 28, wherein the second light source is positioned to lie between the lens and the photovoltaic cell.

31. (Withdrawn) The device of claim 20, wherein the first optical channel includes a single fiber optic strand.

32. (Withdrawn) The device of claim 20, wherein the first optical channel includes plural fiber optic strands.

33. (Withdrawn) An opto-electric device, comprising:

a first circuit including a first light source;

a second circuit including a second light source and a photovoltaic cell to provide energy to at least a portion of the second circuit;

a first optical channel optically coupled to the first and second circuits, light from the first light source being transmitted to the photovoltaic cell over the first optical channel; and

a second optical channel optically coupled to the first and second circuits, light from the second light source being transmitted over the second optical channel.

34. (Cancelled).

35. (Withdrawn) The device of claim 33, wherein light from the second light source provides feedback to the first circuit regarding a condition in the second circuit.

36. (Cancelled).

37. (Withdrawn) The device of claim 33, wherein the second circuit further comprises a storage device, and the photovoltaic cell provides energy to the storage device.

38. (Withdrawn) The device of claim 37, wherein the storage device comprises a battery.

39. (Withdrawn) The device of claim 37, wherein the storage device comprises a capacitor.

40. (Withdrawn) The device of claim 33, further comprising a lens positioned adjacent an end of the first optical channel so that light from the first light source passes through the lens prior to reaching the photovoltaic cell.

41. (Withdrawn) The device of claim 40, wherein the lens is configured to disperse the light from the first light source.

42-51 (Cancelled).

52. (Withdrawn) The device of claim 33, wherein the first optical channel comprises:

a first region optically coupling the first light source to the photovoltaic cell; and

a second region optically coupling the second light source to the first circuit.

53. (Withdrawn) The device of claim 52, wherein the first optical channel further comprises an isolation layer interposed between the first and second regions, the isolation layer inhibiting optical communication between the first and second regions.

54. (Withdrawn) The device of claim 53, wherein the isolation layer is an optically non-transparent material.

55. (Withdrawn) The device of claim 53, wherein the isolation layer has an impedance mismatch with the first and second regions to inhibit optical communication between the first and second regions.

56. (Withdrawn) The device of claim 52, wherein light from the second light source provides feedback to the first circuit regarding a condition in the second circuit.

57. (Withdrawn) The device of claim 52, wherein the second circuit further comprises a storage device, the photovoltaic cell providing energy to the storage device.

58. (Withdrawn) The device of claim 57, wherein the storage device comprises a battery.

59-60. (Cancelled)

61. (Previously presented) The method of claim 62, wherein power is generated by the first light signal impinging a photovoltaic cell.

62. (Previously presented) A method of electrically isolating a remote circuit from a controller, the method comprising the steps of:

transmitting a first light signal;

converting the transmitted first light signal to electrical power only;

powering the remote circuit with the electrical power;

converting an electrical output signal from the remote circuit to a second light signal;

transmitting the second light signal; and

converting the transmitted second light signal to an electrical input signal for the controller to cause the controller to perform a task corresponding to the remote circuit electrical output signal;

wherein the first and second light signals are optically coupled over a signal optical channel.

63. (Original) The method of claim 62, further comprising the step of communicating the first light signal and the second light signal in a half-duplex mode.

64. (Previously presented) The method of claim 63, wherein the step of communicating the first and second light signals in half-duplex mode comprises the steps of:

communicating the first light signal according to a duty cycle having an on state and an off state; and

communicating the second light signal during the off state of the duty cycle.

65. (Original) The method of claim 62, further comprising the step of communicating the first light signal and second light signal in full-duplex mode.

66. (Previously presented) The method of claim 65, wherein the step of communicating the first and second light signals in full-duplex mode comprises the steps of:

selecting a first frequency for the first light source;

selecting a second frequency for the second light source, the second frequency being different from the first frequency;

providing a photovoltaic cell responsive to the first frequency; and

providing an opto-electrical sensor responsive to the second frequency.

67. (Previously presented) The method of claim 60, wherein the first light signal is transmitted over a first optical channel and the second light signal is transmitted over a second optical channel.

68. (Previously presented) The method of claim 67, wherein the first and second light signals are transmitted in a full-duplex mode.

69. (Previously presented) The method of claim 68, further comprising the step of optically shielding the first and second optical channels to inhibit optical communication between the first and second optical channels.

70. (Withdrawn) The device of claim 20 wherein the first optical channel is a fiber optic line.

71. (Currently amended) An optical isolation device for isolating a user of a remote circuit for controlling equipment in a point of care environment from a circuit for powering the equipment, the device comprising:

an optical channel;

a light source for transmitting light in a first direction through the channel;

a detector for producing power in response to the transmitted light;

a signal generator powered by the power from the detector and electrically coupled to the remote circuit, the signal generator transmitting optical signals in a second direction through the channel in response to user-generated input signals from the remote circuit; and

a sensor for producing electrical signals for controlling the equipment in response to the transmitted optical signals.

72. (Cancelled)

73. (Previously presented) An optically isolated control system, including:

a remote circuit for providing an input signal;

source circuit including a power source, a controller, and an actuator controlled by the controller;

an isolation device for optically isolating the remote circuit from the source circuit, the isolation device including

an optical channel,

a light source powered by the power source for transmitting light through the channel,

a detector for converting the transmitted light to electrical power for powering the remote circuit,

an optical signal generator, powered by the electrical power, for converting the input signal from the remote circuit to an optical signal, the optical signal generator transmitting the optical signal through the channel, and

a sensor for converting the transmitted optical signal to an electrical signal;

wherein the source circuit controller responds to the electrical signal by causing the actuator to perform a task corresponding to the input signal from the remote circuit.